

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-6 (Canceled).

7. (New) A Raman amplifier, comprising:

a first pump source configured to provide pump light at a first central wavelength;
a second pump source configured to provide pump light at a second central wavelength, light from said first pump source and said second pump source configured to produce a Raman gain having a predetermined amplification bandwidth in a gain medium;
a third pump source configured to provide pump light at a third central wavelength that is between said first and second central wavelengths; and
a fourth pump source configured to provide pump light at a fourth central wavelength, outside of a wavelength range defined by said first and second central wavelengths, wherein the predetermined amplification bandwidth is increased when pump lights from said third and fourth pump sources are applied to the gain medium.

8. (New) A Raman amplifier, comprising:

a first pump source configured to provide pump light at a first central wavelength;
a second pump source configured to provide pump light at a second central wavelength, light from said first pump source and said second pump source being applied to a gain medium to produce a Raman gain having a predetermined gain deviation within a predetermined amplification bandwidth;
a third pump source configured to provide pump light at a third central wavelength between said first and second central wavelengths; and

a fourth pump source configured to produce pump light at a fourth central wavelength, outside of a wavelength range defined by said first and second central wavelengths,

wherein an expanded amplification bandwidth is formed when pump light from the third and fourth pump sources is also applied to the gain medium while not substantially exceeding said predetermined gain deviation in said predetermined amplification bandwidth.

9. (New) A Raman amplifier, comprising:

a first pump source configured to provide pump light at a first central wavelength;

a second pump source configured to provide pump light at a second central wavelength, light from said first pump source and said second pump source configured to produce a Raman gain having a predetermined amplification bandwidth in a gain medium;

a third pump source configured to provide pump light at a third central wavelength between said first and second central wavelengths such that the first, second and third central wavelengths are substantially equidistant apart; and

a fourth pump source configured to provide pump light at a fourth central wavelength, outside of a wavelength range defined by said first and second wavelengths,

wherein the predetermined amplification bandwidth is increased when pump lights from said third and fourth pump sources are applied to the gain medium.

10. (New) A Raman amplifier, comprising:

a first pump source configured to provide pump light at a first central wavelength;

a second pump source configured to provide pump light at a second central wavelength, light from said first pump source and said second pump source configured to produce a Raman gain at C-band in a gain medium;

a third pump source configured to provide pump light to the gain medium at a third central wavelength;

a fourth pump source configured to provide a pump light to the gain medium at a fourth central wavelength, light from said third pump source and said fourth pump source configured to produce Raman gain at L-band in the gain medium; and

a fifth pump source configured to provide pump light at a central wavelength that is between the first and second central wavelengths,

wherein the C-band and the L-band are simultaneously amplified in the gain medium.

11. (New) A Raman amplifier, comprising:

a first pump source configured to provide pump light at a first central wavelength;

a second pump source configured to provide pump light at a second central wavelength, light from said first pump source and said second pump source configured to produce a Raman gain having a predetermined gain deviation within C-band;

a third pump source configured to provide pump light to the gain medium at a third central wavelength;

a fourth pump source configured to provide a pump light to the gain medium at a fourth central wavelength, light from said third pump source and said fourth pump source configured to produce a Raman gain at L-band in the gain medium; and

a fifth pump source configured to provide pump light to the gain medium at a fifth central wavelength that is between the first and second central wavelengths,

wherein the C-band and L-band are simultaneously amplified and an expanded amplification bandwidth is formed when pump light from the third, fourth and fifth pump sources is also applied to the gain medium while not substantially exceeding said predetermined gain deviation in the C-band.

12. (New) A Raman amplifier, comprising:

a first pump source configured to provide pump light to a gain medium at a first central wavelength;

a second pump source configured to provide pump light to the gain medium at a second central wavelength, light from said first pump source and said second pump source configured to produce a Raman gain at C-band in the gain medium;

a third pump source configured to provide pump light to the gain medium at a third central wavelength;

a fourth pump source configured to provide a pump light to the gain medium at a fourth central wavelength, light from said third pump source and said fourth pump source configured to produce a Raman gain in the gain medium at L-band; and

a fifth pump light configured to provide pump light to the gain medium at a fifth central wavelength that is between the first and second central wavelengths such that the first, second and fifth central wavelengths are substantially equidistant apart in wavelength,

wherein the C-band and L-band are simultaneously amplified in the gain medium.